

SWARNANDHRA
COLLEGE OF ENGINEERING & TECHNOLOGY
(Autonomous)

SEETHARAMAPURAM, NARSAPUR-534280 W.G.DT. AP

DEPARTMENT OF BACHELOR OF COMPUTER APPLICATIONS(Honours)

TEACHING PLAN

Course Code	Course Title	Year/Sem	Branch	Contact hr/week	Academic Year
24BC3T04	ARTIFICIAL INTELLIGENCE	II/III	BCA(Honours)	6	2025-2026

Course Objectives:

1. The student should be made to study the concepts of Artificial Intelligence, learn the methods of solving problems using Artificial Intelligence.
2. The student should be made to introduce the concepts of applications of AI, namely game playing, theorem proving, and machine learning.
3. To learn different knowledge representation techniques

Course Outcomes (Cos): At the end of the course, student will able to

CO No.	Course Outcome	Knowledge Level (K)
CO1	Understand the fundamental concepts of Artificial Intelligence, types of agents, and problem formulation techniques.	K1
CO2	Apply various search strategies, including uninformed, heuristic, and adversarial search algorithms for problem solving and game playing.	K3
CO3	Represent knowledge using logic-based and rule-based systems, and apply probabilistic reasoning under uncertainty.	K2
CO4	Demonstrate understanding of first-order logic and perform inference techniques like unification, forward, and backward chaining.	K4
CO5	Analyze and apply learning strategies such as decision trees, explanation-based learning, statistical methods, and reinforcement learning.	K3

Wee k No	Outcome	Bloom s Level	Topic / Activity		Text Boo ks	Conta ct Hours	Delivery Method
UNIT-I							
1,2	Students will be able to explain the	K2, K3	1.1	Introduction, AI problems	T1	2	
			1.2	Foundation of AI and history of AI	T1	2	

foundations and history of Artificial Intelligence, understand intelligent agents and environments with the concept of rationality, and apply problem formulation techniques for problem-solving agents.	1.3	Intelligent agents: Agents and Environments	T1	1	Chalk & Board, PPT, Interactive Whiteboarding
	1.4	The concept of rationality	T1	1	
	1.5	The nature of environments	T1	2	
	1.6	Structure of agents	T1	2	
	1.7	Problem solving agents,	T1	1	
	1.8	Problem formulation	T1	2	

UNIT-II

3,4	Students will be able to apply uninformed and informed search strategies, analyze heuristic-based problem-solving methods, and evaluate game-playing algorithms with techniques like minimax and alpha-beta pruning.	K3, K4	2.1	Searching for solutions	T1	1	Chalk & Board, PPT , Interactive Whiteboarding
			2.2	Uniformed search strategies – Breadth first search	T1	1	
			2.3	Uniformed search strategies – depth first Search	T1	1	
			2.4	Search with partial information (Heuristic search) Hill climbing	T1	1	
			2.5	A* Algorithm	T1	1	
			2.6	AO* Algorithms	T1	1	
			2.7	Problem reduction	T1	1	
			2.8	Games	T1	1	
			2.9	Mini-max algorithm	T1	1	
			2.10	Optimal decisions in multiplayer games	T1	1	
			2.11	Problem in Game playing	T1	1	
			2.12	Alpha-Beta pruning	T1	1	
			2.13	Evaluation functions.	T1	1	

Mid I Exam

UNIT-III

5, 6	Students will be able to explain different knowledge representation schemes, apply rule-based deduction and probabilistic reasoning, and analyze methods like predicate logic, semantic nets, frames, and uncertainty handling techniques.	K3,K4	3.1	Knowledge representation issues	T1	1	Chalk & Board, PPT , Interactive Whiteboarding
			3.2	Predicate logic-logic programming	T1	2	
			3.3	Semantic nets-frames and inheritance	T1	2	
			3.4	Constraint propagation	T1	1	
			3.5	Representing knowledge using rules	T1	1	
			3.6	Rules based deduction systems		1	
			3.7	Reasoning under uncertainty		1	
			3.8	Review of probability		1	
			3.9	Bayes' probabilistic interferences and dempstershafer theory.		2	

UNIT-IV

7,8	Students will be able to understand first-order logic, apply inference techniques such as unification, forward and backward chaining, and distinguish between propositional and first-order inference methods.	K4	4.1	First order logic	T1	2	Chalk & Board, PPT , Interactive Whiteboarding
			4.2	Inference in first order logic	T1	2	
			4.3	propositional vs. first order inference	T1	2	
			4.4	unification & lifts forward chaining	T1	3	

UNIT-V

9, 10	Students will be able to apply reasoning methods like backward chaining and resolution, and analyze different learning approaches including inductive learning, decision trees, explanation-based learning, statistical methods, and reinforcement learning.	K5	5.1	Backward chaining	T1	2	Chalk & Board, PPT , Interactive Whiteboarding
			5.2	Resolution	T1	1	
			5.3	Learning from observation Inductive learning	T1	3	
			5.4	Decision trees	T1	2	
			5.5	Explanation based learning		2	
			5.6	Statistical Learning methods		2	
			5.7	Reinforcement Learning.		2	
Mid II Exam							
Total No. of Classes						61	

Recommended Text Books for Reading:

T1: S. Russel and P. Norvig, "Artificial Intelligence – A Modern Approach", Second Edition, Pearson Education.

T2: Kevin Night and Elaine Rich, Nair B., "Artificial Intelligence (SIE)", Mc Graw Hill.


Faculty


Head of the Department


Principal